

**A. Cover Sheet** (Attach to front of proposal.)

1. Specify: ☒ agricultural project or ☐ individual application  
☐ urban project ☒ joint application
2. Proposal title-concise but descriptive: Southwest Stanislaus County Regional Drainage Water Management
3. Principal applicant-organization or affiliation: San Joaquin Valley Drainage Authority
4. Contact-name, title: Frances Mizuno, Assistant Executive Director, SLDMWA (Providing Administrative Services to Drainage Authority)
5. Mailing address: Route 1, Box 35 F, Byron, CA 94514
6. Telephone: 209-833-1040
7. Fax: 209-833-1034
8. E-mail: [frances.mizuno@sldmwa.org](mailto:frances.mizuno@sldmwa.org)
9. Funds Requested-dollar amount \$616,200
10. Applicant cost share funds pledged-dollar amount: \$231,938
11. Duration-(month/year to month/year): April 2001 to May 2003
12. State Assembly and Senate districts and Congressional district(s) where the project is to be conducted: 26<sup>th</sup> Assembly District; 12<sup>th</sup> Senate District; 18<sup>th</sup> Congressional District
13. Location and geographic boundaries of the project: West side of San Joaquin Valley, Stanislaus County, Between I-5 and San Joaquin River from approximately 1/2 mile southerly of Orestimba Creek to Stanislaus/ San Joaquin County Line
14. Name and signature of official representing applicant. By signing below, the applicant declares the following:
  - the truthfulness of all representations in the proposal;
  - the individual signing the form is authorized to submit the application on behalf of the applicant;
  - the applicant will comply with contract terms and conditions identified in Section 11 of this PSP.

Frances Mizuno  
(printed name of applicant)

February 14, 2001  
(date)

(signature of applicant)

## **B. Scope of Work**

### **SW Stanislaus County Regional Drainage Water Management– Marshall Drain Improvements**

#### **Relevance and Importance**

##### **1. Abstract (Executive Summary)**

The proposal will be subdivided into two major work tasks or phases. A map indicating the project area is attached.

Phase 1 is to develop and implement specific modifications to improve the operation of the Marshall Road Drain situated in southwest Stanislaus County within the next two years. The goal of these modifications will be geared specifically to: a) reducing the silt loading to the San Joaquin River; b) reducing Organophosphorus (OP) Pesticide levels in the drainage water discharged to the San Joaquin River; c) reducing constituents adversely affecting the dissolved oxygen level within the San Joaquin River; and d) developing new water through construction of operational spill and tailwater recovery systems to further improve the local efficiency of water management.

This effort will necessitate the cooperation of various agencies. The watershed tributary to Marshall Drain consists of approximately 6,800 irrigated acres. This acreage is primarily located within the Central California Irrigation District (CCID), Del Puerto Water District (DPWD), and Patterson Irrigation District (PID). Silt laden upslope surface drainage and operational spill water presently discharge from these Districts into the Drain and then into the San Joaquin River. Projects involving all three agencies are contemplated and will be developed into a final Marshall Road Drain Master Plan.

One specific project proposed during the next two years is the design and construction of a 15 – 20 acre terminal desilting and spill water recovery reservoir adjacent to Marshall Drain. This would reduce direct discharges to the San Joaquin River and allow opportunities for improved water management by recycling this drain water back into the local irrigation supply. Other possible projects include the development of on-farm tailwater return systems within each District and necessary canal/distribution system improvements to further enhance water reuse flexibility. This project will partially address CALFED Quantifiable Objectives 81, 98, 101, 104, by reducing surface drainage discharge back into the San Joaquin River. The project will also partially address CALFED Quantifiable Objective 90 by developing additional water supplies, which could reduce diversion requirements by increasing operational flexibility.

Phase 2 will be completed in the second year and will utilize the lessons learned from the development and implementation of the initial Marshall Road Drain Project to finalize and develop an overall master plan strategy for other watershed drainage channels within southwest Stanislaus County. The objectives for this study will also be items (a) to (d) listed under Phase 1. These drainage channels include Hospital Creek, Ingram Creek, Del Puerto Creek, the Spanish Land Grant Drain, and Orestimba Creek. The DPWD and CCID have already discussed the possibility of constructing a regional desilting and tailwater recovery reservoir for the Spanish Land Grant Drain adjacent to CCID's Main Canal. The master plan report will review this proposal and other water management options in the study area. The study area covers approximately 85,000 agricultural acres between Interstate 5 and the San Joaquin River from just southerly of Orestimba Creek to the Stanislaus/San Joaquin County line. In addition to the water agencies mentioned above, the drainage study area also includes a large portion of the West Stanislaus Irrigation District (WSID). The feasibility study will develop and analyze data from the various watershed drainage channels and will recommend projects to reduce surface drainage and spill water flows from discharging directly into the San Joaquin River. Potential projects will include the development of on-farm tailwater return systems within each district to improve water management opportunities and possibly the installation of regional desilting/tailwater return reservoirs to manage discharges from the drainage catchment areas within each District. Finally, there is the opportunity to further develop wildlife areas located at the existing drainage discharge sites to the river utilizing proven wetland treatment practices.

## **2. Statement of Critical Water Issues**

The ongoing population growth and environmental water use in the State of California will continue to put added pressure on agricultural water suppliers to prudently manage their existing water supplies. The availability of agricultural water supplies is likely to reduce further in the future, and therefore, an even greater emphasis will be placed on efficiently managing existing water supplies. It is also likely there will be continuing discussions with the Central Valley Regional Water Quality Control Board (CVRWQCB) on total maximum daily load (TMDL) limits for various constituents in the San Joaquin River. A petition has been filed with the CVRWQCB to rescind the existing waiver, exempting irrigated agricultural return flows from regulation and requesting that an agricultural permitting program be implemented to protect water quality in the San Joaquin River. The participating water suppliers realize these water issues will be an ongoing concern in the future. The proposed project will fill a critical Bay-Delta need by initially reducing surface drainage flows to the San Joaquin River for the Marshall Road Drain, and will develop additional field data on other drainage discharges in the feasibility study so additional projects can be designed to improve water management.

The proposed project is consistent with the local water management plans prepared by CCID, DPWD, WSID and PID for the U.S. Bureau of Reclamation which call for construction of regulatory reservoirs to capture operational spill and improve distribution system delivery flexibility. The project is also consistent with other resource plans prepared by the Westside Resource Conservation District.

### **3. Nature, Scope, and Objectives of Project**

The specific goals of this project will be to A) Reduce the silt load to the San Joaquin River, B) Reduce OP pesticide levels in the drainage water discharged to the San Joaquin River, C) Reduce constituents adversely affecting the dissolved oxygen level within the San Joaquin River and D) Improve the management of the existing water supplies through construction of operational spill and tailwater recovery systems to further improve the local efficiency of water management.

This project will specifically address the following Quantifiable Objectives defined as Priority Outcomes in Table 2 in the proposal/solicitation package:

- No. 81 Reduce nutrients to enhance and maintain beneficial uses of water.
- No. 90 Provide long term diversion flexibility to increase the water supply for beneficial uses.
- No. 98 Reduce native constituents to enhance and maintain beneficial uses of water.
- No. 101 Reduce pesticides to enhance and maintain beneficial uses of water.
- No. 104 Reduce salinity to enhance and maintain beneficial uses of water.

Nutrients, pesticides, salinity, and native constituent loading to the San Joaquin River should be reduced with the proposed project. Preliminary estimates for the Marshall Road Drain indicate there is the potential in this 6,800 acre watershed to reduce agricultural surface drainage by approximately 1,600 to 2,500 acre feet per year (see Table 1). If the total dissolved solids in the drainage water is approximately 900 parts per million, this would equate to a reduction of approximately 2000 to 3000 tons of salt per year to the San Joaquin River. For the 85,000 acre study area, preliminary estimates indicate there is the potential to reduce agricultural surface drainage to the San Joaquin River by 21,000 to 31,000 acre feet per year (see Table 1). Definitive estimates on nutrient, pesticide, and native constituent loading to the river are uncertain at the present time, but it is anticipated a comparable reduction in loading would occur with the proposed Marshall Road Drain Project. The construction of the proposed desilting and tailwater recovery reservoir in conjunction with irrigation

delivery system improvements will further increase water delivery flexibility to local water suppliers. Increased water delivery flexibility will improve water operations and overall water management in the local agricultural area.

#### **4. Technical/Scientific Merit, Feasibility, Monitoring, and Assessment**

Methods, procedures, and facilities. The existing Marshall Road Drain is a pipeline project constructed in the early 1970's by a local storm drain maintenance district. Operational spill water and surface drainage from the local 6,800 acre agricultural watershed area is discharged into this pipeline. CCID has a portable solar powered flow measurement device, which will be utilized during the coming irrigation season to monitor the existing Marshall Drain flows. This information will be utilized to refine the estimated annual drainage flows and provide the basis for sizing the proposed desilting pond which will be constructed in Phase 1. The construction of the facilities described in Phase 1 is an action-specific project. The West Stanislaus Resource Conservation District along with district staff from the respective water districts will tabulate the existing flow data and obtain water samples for water quality analyses. This data will be used to confirm the benefits a desilting and tailwater recovery reservoir would have on San Joaquin River water quality. A detailed review of the existing irrigation systems will be undertaken to determine the best means of implementing the reuse of the surface drainage stored in a constructed desilting reservoir. Additional field review of the 6,800 acre Marshall Drain watershed will also be made to investigate the feasibility of developing additional on farm tailwater return systems to further improve water management.

Following completion of Phase 1, the information developed from the Marshall Road Drain project will be utilized in Phase 2 to recommend similar on farm tailwater return systems throughout the 85,000 acre drainage study area. It is anticipated the construction of regional desilting/tailwater return reservoirs will be recommended to manage the existing discharges from the different drainage areas. Opportunities to recirculate and reuse the captured drainage water, blending it back into existing irrigation supplies will be recommended when it will optimize improvements in water supply flexibility.

#### **5. Schedule**

Attached as Table 2 is a simple bar chart listing the estimated schedule of tasks, deliverable items, estimated completion dates and projected costs for each task.

## **6. Monitoring and Assessment**

The recently established San Joaquin Valley Drainage Authority will administer the monitoring and assessment of the Marshall Road Drain Project (Phase 1) and they will oversee the Drainage Feasibility Study (Phase 2) which will be undertaken in southwest Stanislaus County as described above. Staff members will work in cooperation with the West Stanislaus Resource Conservation District in gathering data and monitoring the proposed desilting and recovery reservoir to be constructed in Phase 1. Flow meters will be installed to monitor the drainage flows into the proposed desilting and tailwater reservoir. A flow meter will also be installed at the proposed pump to measure the quantity of drainage water pumped back for reuse in the existing irrigation supply system. Water samples will be obtained to verify the quality of the water being recaptured and no longer being discharged into the San Joaquin River. The San Joaquin Valley Drainage Authority will oversee all data collection, handling, storage and accessibility to project information.

### **C. Outreach, Community Involvement and Information Transfer**

The water suppliers cooperating in the proposed project are all members of the San Luis & Delta-Mendota Water Authority (SLDMWA). The SLDMWA, working with the respective water suppliers, has established a public relations program to update landowners, water users, and city leaders and other interested parties on the westside of the San Joaquin Valley regarding various water issues impacting the valley's westside and the local communities. Attached is a copy of the notice of Del Puerto Water District's Annual Meeting held February 1, 2001.

The cities of Westley and Patterson are located within the 85,000 acre drainage area described in Phase 2. Vernalis is located just to the north and the Cities of Newman and Gustine are located to the south. If this proposal is accepted and funded, the San Joaquin Valley Drainage Authority will contact the leaders of each city and discuss with them the proposed project and its potential impact on each community. Contacts will also be made with Stanislaus County leaders to describe the proposed project, various land use issues, and how the proposed project will benefit the local environment and water management in the county.

### **D. Qualifications of the Applicants, Cooperators and Establishment of Partnerships**

As mentioned above, the applicant is the San Joaquin Valley Drainage Authority. The following water suppliers will be joint cooperators on this project:

1. West Stanislaus Irrigation District  
Address: P.O. Box 37, Westley, CA 95387  
Phone: 209-894-3091  
General Manager: Ron Roos  
Acreage: 25,600  
Water Supply: CVP and Local Surface Supply
2. Patterson Irrigation District  
Address: P.O. Box 685, Patterson, CA 95363  
Phone: 209-892-6233  
General Manager: John Sweigard  
Acreage: 13,466  
Water Supply: CVP and Local Surface Supply
3. Del Puerto Water District  
Address: P.O. Box 98, Westley, CA 95387  
Phone: 209-892-4470  
General Manager: William Harrison  
Acreage: 44,750  
Water Supply: CVP
4. Central California Irrigation District  
Address: P.O. Box 1231  
Phone: 209-826-1421  
General Manager: Chris White  
Water Supply: Exchange Contract Supply

All of the water suppliers will jointly cooperate on this proposed project working under the San Joaquin Valley Drainage Authority. The first three water suppliers listed are members of the San Joaquin Valley Drainage Authority. Although CCID is not a member, it will participate as a member of the San Joaquin River Exchange Contract Authority, which is a member of the Drainage Authority. The local West Stanislaus Resource Conservation District (WSRCD) will be an additional cooperator in the project. The WSRCD is actively involved with agricultural surface drainage issues and wants to participate in the development, implementation, and monitoring of the proposed project. The WSRCD contact will be:

Name: Norman Crow  
Address: 220 North El Circulo, Patterson, CA 95326

Phone: 209-892-3026

Engineering services for the proposed project will be provided by Summers Engineering, Inc. Attached is a resume of the firm.

#### **E. Costs and Benefits**

1. Attached as Table 3 is a Budget Summary breakdown for Phases 1 and 2.
2. The labor costs for flow monitoring, drainage water sampling, and ongoing maintenance of the Phase 1 constructed tailwater/desilting reservoir would be covered as a local share cost by the participating water agencies. Existing staff of the participating water agencies would be assigned this responsibility. Estimated labor and vehicle costs of \$250 per day were utilized. One of the cooperating water agencies has a solar powered flow meter, which will be utilized to obtain flow information. Water quality analysis for the various water samples was assumed at \$100 each. A preliminary estimate to construct a 100 acre foot reservoir was prepared. The estimated cost to construct the reservoir levees, the inlet/outlet structures, and a pump with electrical equipment to lift the recovered water back into the adjacent irrigation canal is also listed. The participating water agencies will provide in kind service by using available construction equipment to finance their share of the estimated construction costs. The land acquisition costs include the estimated cost to purchase the land for the proposed Phase 1 reservoir site. The estimated Engineering costs cover the anticipated cost to meet CEQA requirements, review the field data, and finalize the design for the reservoir.

The Phase 2 Budget Summary includes similar unit costs for the field sampling and flow monitoring. It is assumed measuring weirs will be installed at appropriate locations in each watershed to provide the ability to measure the drainage flows for each drainage channel. The Engineering cost includes providing a detailed review of each drainage watershed, analyzing the field data, meeting with the cooperating agencies, and designing specific water management options to address the goals of the project outlined in the Item B., Scope of Work, Abstract (Executive Summary).

3. Benefit Summary Breakdown.
  - a. One of the quantified benefits with the construction of the proposed reservoir in Phase 1 is the reduction of PID's pumping from the San Joaquin River. If the proposed project is constructed, the water stored and reused by the District (estimated at 1651 acre feet minimum), will reduce the annual quantity of water pumped from the river. This is a



benefit to PID. The future anticipated benefits following completion of the Phase 2 master plan strategy and construction of recommended facilities should be proportional to the anticipated benefits under Phase 1. This would include a total estimated reuse of 20,632 acre feet of water minimum in the study area. This would benefit the cooperating water agencies.

- b. Non-quantified benefits include the increased opportunity to improve water management and operational efficiency. The reuse of drainage and operational spill water will increase PID's operational flexibility by providing additional storage to meet peak irrigation demands near the end of an irrigation lateral and allow the capture and reuse of operational spills. The construction and maintenance of an additional reservoir and pump station will not simplify labor requirements, but it should provide additional operational flexibility. This is a benefit to PID. The future non-quantifiable benefits for implementation of recommended Phase 2 projects should be comparable and provide increased operational flexibility to the participating water suppliers.

An additional non-quantifiable benefit is the reduction of drainage water flows back into the San Joaquin River. It is estimated the Phase 1 project will reduce the drainage flows into the river by at least 1651 acre feet per year. This is a CALFED Bay-Delta benefit. The anticipated future implementation of recommended Phase 2 projects should provide comparable benefits to the CALFED Bay-Delta program.

- 4. Assessment of Costs and Benefits. Table 4 is a summary of the costs and benefits of the Phase 1 project. Table 5 is a summary of the costs and benefits of the Phase 2 project.

The analysis assumptions are based on year 2000 construction costs and interest rates of 6% to calculate the present worth of annual maintenance costs over 30 years.

**Table 1****Estimated Marshall Road Drain Drainage Flows (Phase 1)**

Acreage	Irrigation Application Factors			Annual Applied Water (AF)	Annual Tailwater		Pk Month <sup>4</sup> AF/Day	Ave. Flow Pk Day (cfs)	Operational Spill CFS	Peak Flow CFS	4 Day Storage AF	Proposed Basin Size	
	Net Irrigated (%) <sup>1</sup>	High Volume (%) <sup>2</sup>	Quantity (AF/Ac) <sup>3</sup>		%	AF						Depth	Acreage
6,800	87	90	3.1	16,506	10	1,651	11	5.5	6	11.5	92	6 '	15
6,800	87	90	3.1	16,506	15	2,476	17	8.3	6	14.3	114	6 '	19

**Estimated Southwest Stanislaus County Drainage Study Area Drainage Flows (Phase 2)**

Acreage	Irrigation Application Factors			Annual Applied Water (AF)	Annual Tailwater	
	Net Irrigated (%) <sup>1</sup>	High Volume (%) <sup>2</sup>	Quantity (AF/Ac) <sup>3</sup>		%	AF
85,000	87	90	3.1	206,321	10	20,632
85,000	87	90	3.1	206,321	15	30,948

<sup>1</sup> Estimated Percentage of agricultural land irrigated.<sup>2</sup> Estimated percentage of irrigated land receiving high volume irrigation.<sup>3</sup> Estimated annual irrigation (AF/AC) per Patterson Irrigation District Water Conservation Plan.<sup>4</sup> Peak month discharge estimated as 20% of annual Tailwater.

**Table 2**

**Southwest Stanislaus County Drainage Water Management**

**Preliminary Project Schedule**

Tasks	2001								2002												2003												Projected Costs <sup>1</sup>
	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Phase 1</b>																																	
1. Flow Monitoring																																	\$7,000
2. Initial Water Quality Sampling																																	\$1,500
3. Initial Engineering Recommendations																																	\$3,000
4. Initiate CEQA																																	\$5,000
5. Finalize Contract																																	\$1,000
6. Finalize CEQA																																	\$3,000
7. Engineering Design																																	\$24,000
8. Purchase Land																																	\$230,000
9. Construct Reservoir/structures/pump																																	\$340,000
10. Initial Operation Water Quality Sampling																																	\$2,400
11. Engineering Report																																	\$4,000
<b>Phase 2</b>																																	
12. Install Flow Monitoring Weirs																																	\$4,200
13. Flow Monitoring																																	\$8,800
14. Initial Water Quality Sampling																																	\$6,000
15. Water Quality Analysis																																	\$15,000
16. Engineering Coordination/Master Plan Report																																	\$75,000
17. Initial Study																																	\$15,000

<sup>1</sup> The Projected Costs listed will be funded through Local Share and CALFED requested funds. If this project is selected a detailed breakdown of quarterly fund requests will be prepared as required. Ongoing maintenance costs are not included.

Table 3

## Southwest Stanislaus County Drainage Water Management

## Phase 1 Budget Summary

Item	Amount	Units	Qty	Total Cost	Units	Life (Years)	Present Value	Local Share	CALFED Request
<b>a. Salaries and Wages</b>									
Labor									
Flow Monitoring	\$250	\$/Day	20	\$5,000	\$	30	\$5,000	\$5,000	\$0
Water Sampling	\$250	\$/Day	6	\$1,500	\$	30	\$1,500	\$1,500	\$0
Maintenance	\$250	\$/Day	10	\$2,500	\$	30	\$34,413	\$34,413	\$0
<b>b. Fringe Benefits</b> (Included in salaries)									
<b>c. Supplies</b>									
Provide Solar Powered Flow Meter	\$100	\$/Day	20	\$2,000	\$	30	\$2,000	\$2,000	\$0
<b>d. Equipment &amp; Construction</b>									
Installed Pump & Elec.	\$42,000	\$	1	\$42,000	\$	30	\$42,000	\$0	\$42,000
Install Reservoir Comp. Emb.	\$270,000	\$	1	\$270,000	\$	30	\$270,000	\$88,000	\$182,000
Installed Inlet/Outlet Structures	\$28,000	\$	1	\$28,000	\$	30	\$28,000	\$0	\$28,000
Annual Reservoir Maintenance	\$5,000	\$/yr	1	\$5,000	\$/yr	30	\$68,825	\$68,825	\$0
<b>e. Services and Consultants</b>									
Water Quality Analysis	\$100	\$	24	\$2,400	\$	30	\$2,400	\$2,400	\$0
<b>f. Travel</b> (Costs Included in Salaries)									
<b>g. Other direct costs including planning, design, construction, maintenance, etc.</b>									
Land Acquisition	\$10,000	\$/Ac	23	\$230,000	\$	30	\$230,000	\$0	\$230,000
Engineering/CEQA	\$40,000	\$	1	\$40,000	\$	30	\$40,000	\$0	\$40,000
<b>h. Phase 1 Estimated Costs; items (a through g) Subtotal</b>									
							\$724,138	\$202,138	\$522,000

## Phase 2 Budget Summary

Item	Amount	Units	Qty	Total Cost	Units	Life (Years)	Present Value	Local Share	CALFED Request
<b>a. Salaries and Wages</b>									
Labor									
Flow Monitoring	\$250	\$/Day	24	\$6,000	\$	30	\$6,000	\$6,000	\$0
Water Sampling	\$250	\$/Day	24	\$6,000	\$	30	\$6,000	\$6,000	\$0
<b>b. Fringe Benefits</b> (Included in salaries)									
<b>c. Supplies</b>									
Provide Solar Powered Flow Meter	\$100	\$/Day	28	\$2,800	\$	30	\$2,800	\$2,800	\$0
<b>d. Equipment &amp; Construction</b>									
Install Flow Monitoring Weirs	\$700	\$	6	\$4,200	\$	30	\$4,200	\$0	\$4,200
<b>e. Services and Consultants</b>									
Water Quality Analysis	\$100	\$	150	\$15,000	\$	30	\$15,000	\$15,000	\$0
<b>f. Travel</b> (Costs included in Salaries)									
<b>g. Other direct costs including planning, design, construction, maintenance, etc.</b>									
Engineering/Initial Study	\$90,000	\$	1	\$90,000	\$	30	\$90,000	\$0	\$90,000
<b>h. Phase 2 Estimated Costs; items (a through g) Subtotal</b>									
							\$124,000	\$29,800	\$94,200

## Phase 1 &amp; 2 Total Estimated Costs

\$848,138	\$231,938	\$616,200
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## Analysis Assumptions

Discount Rate is 6% ; Present Value of costs and benefits are provided in year 2000 dollars

### Table 4

## Southwest Stanislaus County Drainage Water Management

### Phase 1 Summary of Quantified and Non-Quantified Costs and Benefits

[illegible]

Table 5

## Southwest Stanislaus County Drainage Water Management

## Phase 2 Summary of Quantified and Non-Quantified Costs and Benefits

Item	Amount	Units	Qty	Total Cost	Units	Life (Years)	Present Value	Beneficiary
Quantified Costs								
Labor								n/a
Flow Monitoring	\$250	\$/Day	24	\$6,000	\$	30	\$6,000	
Water Sampling	\$250	\$/Day	24	\$6,000	\$	30	\$6,000	n/a
Provide Solar								n/a
Powered Flow Meter	\$100	\$/Day	28	\$2,800	\$	30	\$2,800	
Install Flow Monitoring								
Weirs	\$700	\$	6	\$4,200	\$	30	\$4,200	n/a
Water Quality Analysis	\$100	\$	150	\$15,000	\$	30	\$15,000	n/a
Engineering	\$90,000	\$	1	\$90,000	\$	30	\$90,000	n/a
Subtotal	\$124,000							
Quantified Benefits								
Future Pumping Reduction	Potential	\$/yr	1	?	\$/yr	30	?	Cooperating Agencies
Subtotal	\$0							
Non-Quantified Costs								
(None)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Non-Quantified Benefits								
Future Increase in Water Management Efficiency	Potential	n/a	n/a	n/a	n/a	n/a	n/a	Cooperating Agencies CALFED (QO 90)
Future Reduced Drainage Inflow to San Joaquin River <sup>1</sup>	18,981	AF/yr	n/a	n/a	n/a	n/a	n/a	CALFED (QO 81, 98,101,104)
Analysis Assumptions								
Discount Rate is 6%								
Present Value of costs and benefits are provided in year 2000 dollars								

<sup>1</sup>The future reduced drainage flow to the S.J. River under Phase 2 is the estimated study area drainage flow less the flow reduced under Phase 1.